

A New Species of *Favartia* (*Caribiella*) from the Galápagos Islands

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(3 Text figures)

THE GALÁPAGOS ISLANDS have been recognized as a "laboratory of evolution" since the time of Charles Darwin. As we become better acquainted with the molluscan fauna we see there are many endemic species that have near relatives on the mainland of the Tropical East Pacific. Among the muricids, for example, there are *Maxwellia angermeyerae* (Emerson and D'Attilio, 1965), *Pteropurpura deroyana* Berry, 1968, *Murexsul jacquelinae* Emerson and D'Attilio, 1969, *Murexiella radwini* Emerson and D'Attilio, 1970, and *Paziella galapagana* (Emerson and D'Attilio, 1970).

This paper is the report of yet another form, heretofore misidentified as *Favartia erosa* (Broderip), which is its "next of kin" living on the Pacific mainland from Mexico to Panamá (KEEN, 1971: 532). The species "*Murex*" *erosus* Broderip, 1833, has been placed in a variety of genera since its description, including "*Ocinebra*," "*Muricidea*," and "*Aspella*." The rationale for the latter assignment lay in the peculiar habit of the species to abort some of the later varices and to develop a dorso-ventrally flattened shell, reminiscent of *Aspella*. Other than this the two, as we know now only distantly related forms, have little in common.

In the first edition of *Sea Shells of Tropical West America* KEEN cited *erosa* as *Aspella* (*Dermomurex*) (1958: 365). By the second Edition (1972: 532) she and other muricid workers had realized that the species was

better referred to the genus *Favartia*. But there was still a feeling that the shell was not quite properly placed in that taxon. The problem was resolved in 1972 by PERRILLIAT, who proposed a new subgenus (still in the mistaken idea that the nearest relationship was with *Aspella*) as *Aspella* (*Caribiella*), with the type the Caribbean species "*Murex*" *intermedius* C. B. Adams, 1850. Unfortunately, that name is preoccupied by *Murex intermedius* Brocchi, 1814, a fossil *Cymatium* from Italy. However, it had been suggested as far back as TRYON (1880, p. 239) that the Caribbean species was the same as that described by KIENER, without locality¹, as *Murex alveatus* (1842: 94; pl. 46, fig. 2). But because the species had been confused with "*M.*" *erosus* [for example, REEVE (1845: pl. 32) states: "*Hab.* Panama (found under stones at low water); Cuming"] the identity has tended to be overlooked. When one compares mature specimens of *Murex intermedius* (the lectotype figured by CLENCH & TURNER, 1950: pl. 39, fig. 15 is immature) with Kiener's illustration, the identity seems incontestable.

¹ In 1869 TROSCHER figured the radula of a species he cited as "*Ocinebra alveata*" from St. Thomas (Das Gebiß der Schnecken, 2 (3): 119; pl. 11, fig. 10). It is an excellent rendering of the peculiar "three-dimensional" muricopsine rachidian tooth but we were all too blind to see it until Radwin & D'Attilio began their work on the muricid radula. Compare Troschel's figure with the lower drawing in our Figure 3.

At the time of Perrilliat's work, she and the senior author were in correspondence over the matter and originally she intended to propose a new name for the preoccupied *M. intermedius*. In a letter she advised that she would call it *Aspella* (*Caribiella*) *elegans*, n.n. pro *Murex intermedius* Adams non Brocchi. With this knowledge the *Catalogue of the genus Murex Linné* (VOKES, 1971) went to press with the name *Aspella elegans* Perrilliat Montoya, "1971," (n.n. pro *intermedius* Adams), type of the subgenus *Caribiella*.

Due to problems in publication, with which we can all sympathize, Perrilliat's paper did not appear until 1972, and when it did the name *elegans* was not to be seen! Presumably, she had taken Vokes' suggestion on the probability of *Murex alveatus* being the same and deleted the new name at the last minute. As a result, *Murex intermedius* is cited as the type species of her new subgenus *Aspella* (*Caribiella*). Fortunately, the *International Code of Zoological Nomenclature* (Art. 13) states that names published after 1930 must be accompanied by some sort of description or we would be cursed with having to cite the taxon as "*Caribiella* Perrilliat in Vokes, 1971."

To further complicate the matter, the Mexican fossil that is figured as "*Murex intermedius*" (PERRILLIAT, 1972: 83; plt. 39, figs. 14, 15; plt. 40, figs. 1, 2) is not the same as the Recent Caribbean shell but is a new species much closer to *Favartia erosa*. Also, the age of the Santa Rosa beds is now known to be uppermost Miocene (N 17, according to Dr. W. H. Akers, personal communication), not to be correlated with the mid-Pliocene Agueguexquite Formation.

Nevertheless, the Santa Rosa species is important, as it is certainly the ancestor of both the Atlantic *Favartia alveata* and the Pacific *F. erosa* as well as the new species here described. More than any of the Recent species, it shows the dorso-ventral flattening, the resemblance to *Aspella* being even stronger than in the younger forms. The spiral ornamentation is very close to that of *F. erosa*. It seems most unlikely that this highly ornamented shell is closely related to the smooth, almost polished shell of *Aspella*. Furthermore, radular differences show that the members of the genus *Aspella* have a typical muricine radula, but *F. erosa* and its kin have the three-dimensional radula of the Muricopsinae (see Figure 3).

Because of the 1971 cut-off date, in *Murex Shells of the World*, RADWIN & D'ATTILIO (1976) did not include *Caribiella*, placing the species in the genus *Favartia* s.s. However, the peculiar *Aspella*-like habitat of the flattened shell, plus the greatly elongated spire, seems worthy of a subgeneric distinction.

MURICIDAE Rafinesque, 1815

Muricopsinae Radwin & D'Attilio, 1971

Favartia Jousseume, 1880

Favartia JOUSSEUME, 1880, *Le Naturaliste*, Année 2, no. 42, p. 335.

Type species: *Murex breviculus* Sowerby, by OD.

Subgenus *Caribiella* PERRILLIAT, 1972

Caribiella PERRILLIAT, 1972, *Paleontologia Mexicana*, no. 32: 82.

Type species: *Murex intermedius* C. B. Adams [= *Murex alveatus* Kiener], by OD.

Favartia (*Caribiella*) *purdyae*

Vokes & D'Attilio, spec. nov.

(Figure 1)

Description: Shell of moderate size, with protoconch of two smooth, bulbous whorls, exact termination indistinct; six post-nuclear whorls. Early axial ornamentation of about nine small varices lapping onto the protoconch. Certain varices strengthened, relative to others by fourth teleoconch whorl; with, by 6th whorl, only 2 strong varices, at the aperture and the opposite side, remaining; intermediate varices reduced to simple buttress-like structures visible primarily at the suture.

Spiral ornamentation at first of 2 rounded cords, becoming increasingly flattened on the outer side, by 4th whorl appearing almost fused together with only a narrow groove dividing them. On the body whorl, 5 such flattened cords. On top of each cord 4 or 5 thin, incised spiral lines, together with the axial growth lines giving a striking "woven" texture to the surface. On the siphonal canal another strong spiral cord, separated from those on the body whorl by a wide interspace; the varices crossing this space giving rise to a series of deep pits circling the base of the body whorl. Spire elevated, height approximately twice width; suture impressed but obscured by the varical buttresses. Aperture circular, surrounded by a raised peristome; outer lip slightly crenulated by the terminal varix. Siphonal canal short, broad, almost sealed but open by a very narrow slit; distal end strongly recurved; with a small fasciole formed by the termination of the previous canals. Color of shell varying from almost all white to purple-

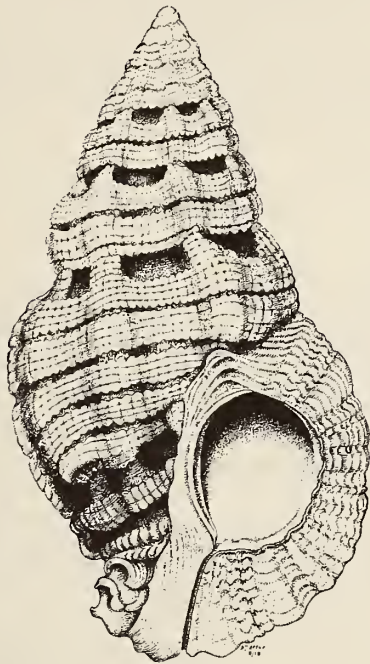


Figure 1

Favartia (Caribiella) purdyae Vokes & D'Attilio, spec. nov.

brown with a white band circling the base of the body whorl; larger varices and aperture white. In well-preserved specimens a thin white intritacalx frosting the entire shell, but normally worn off except in the deeper pits along the suture and the base of the body whorl.

Dimensions of holotype: Height 15.0 mm, diameter 8.0 mm.

Holotype: San Diego Natural History Museum TS776.

Type locality: Isla Plasa, Galápagos Islands (leg. J. DeRoy, 1969), from the collection of Ruth Purdy.

Discussion: Some time back Ruth Purdy (Mrs. Ben Purdy) of San Diego, California, sent the senior author a strange specimen from the Galápagos Islands, which she had obtained under the name "*Aspella indentata*," inquiring as to what it might actually be. The shell was immediately recognized as a new species, the Galápagos endemic form of *Favartia erosa*. This report is the final result of the

question and it gives the authors great pleasure to honor Mrs. Purdy, who has so generously shared her western American muricid material over the years.

Although closely related to the mainland *Favartia erosa*, this new species differs in the nature of the surface ornamentation. The spiral cords have the appearance of having been pressed down with a flat-iron, so that they are completely flat, with faintly incised spiral and axial lines superimposed upon them (see Figure 1). The entire surface has a smooth aspect in contrast to the elaborately sculptured effect of the ornamentation of *F. erosa* (see Figure 2).



Figure 2

Favartia (Caribiella) erosa (Broderip)

The elongation of the fully adult shell appears greater in *F. erosa* than in *F. purdyae*, because the angle of the spire is less acute in *F. purdyae*. Other specimens in the type lot are more elongate than is the holotype, but never is the extreme long, narrow shell shape of *F. erosa* achieved,

although the shells attain comparable sizes (the largest paratype of *F. purdyae* is 16.5 mm in height).

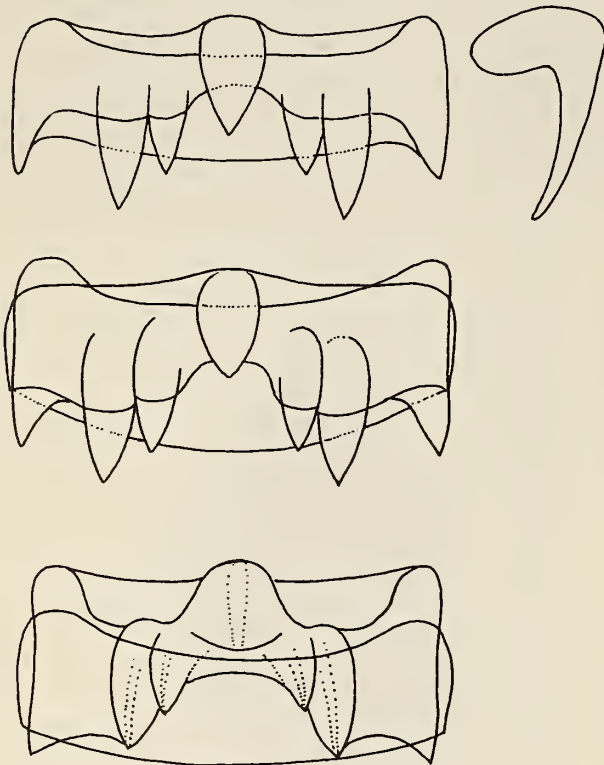


Figure 3

Favartia (Caribiella) purdyae Vokes & D'Attilio, spec. nov.
Academy Bay, Isla Santa Cruz, Galápagos Islands. All teeth are from the same ribbon but resting differently on the slide, showing varying aspects of the structure

Paratypes: In addition to the holotype the following material was examined: AMNH 117941, 2 specimens from Academy Bay, Isla Santa Cruz (Carmen Angermeyer, 1964); AMNH 139469, 1 specimen from Puerto Nuñez, Isla Santa Cruz (Carmen Angermeyer, 1965); 2

specimens from Academy Bay, Isla Santa Cruz, intertidally under rocks (J. deRoy, 1965—Shasky Collection); 3 specimens from north Isla Santa Cruz, intertidally (J. deRoy, 1968—Shasky Collection. The writers would like to acknowledge their gratitude to Donald Shasky, MD, for the loan of these specimens.

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